

Managing worker exposures to dust

Small Mines Roadshow 2024

February to April 2024



What we will cover

- How to determine if respirable silica is a hazard at your site.
- Understanding the sources of dust generation.
- Refresher on sampling and analysis requirements.
- Worker education.
- Empowering workers to take appropriate action when required.
- Controlling exposures.
- Examples of effective control implementation.



Identifying respirable silica as a hazard

Do you know what the silica content is in the materials you work with? (including soils and subsoils and any imported materials)?

Have you conducted monitoring as required by clause 50 of the WHS Regs 2017?

Have you assessed operations conducted on site where dust is generated and put into suspension.

Have you considered duration of worker exposures during operations.

Have you consulted with a professional.



Know the sources of airborne dust at your site!

Do you really know where the dust hot spots are at your site?

Take the time to understand where the dust is being generated.

Concentrate your controls to target these areas.

Wherever possible, remove workers from high potential exposure areas.

Regularly inspect work areas to check on effectiveness of your controls.

Fine tune for effectiveness.

Maintain controls.



NSW legislation

Mine operator obligations

Operators of mines where respirable crystalline silica has been identified as a hazard, are required to undertake compliance sampling and analysis of airborne dust in accordance with Schedule 6 of the regulation, WHS(MPS) Regs 2022.

- Mine operators must determine worker exposures.
- Mine operators must do everything that is reasonably practicable to ensure worker exposures are minimised.
- Mine operators must ensure worker exposures do not exceed WES.
- Any exceedance to the WES for RCS must be reported to the Regulator.
- Regulator may investigate circumstances leading to exceedance.
- Regulator may direct additional controls be implemented.



WHS(MPS)Regs 2022 Schedule 6 specifics

- Must use licenced provider. (licenced by the RR)
- Sampling undertaken for whole shift as far as reasonably practicable or at least 80% of shift.
- Sampling to be undertaken where people normally work.
- No role swapping during sampling as far as reasonably practicable.
- Specific requirements for who is sampled (role specific).
- Must have 5 workers sampled (or every person on site if less than)
- Specific requirements for analysis of samples hence the licensed providers.
- Analysis for respirable silica must be undertaken for every sample taken.
- Samples must be taken at least once every twelve months.



Worker education

Education is powerful!

Workers are far more likely to follow a procedure if they understand the risks.

There is plenty of freely available material to assist you establish a dust education program.

Safe work Australia's website is a good place to start.

The Resources Regulators website has guides, fact sheets, handy links.

Training on the selection, fit testing and use of RPE is important.





Empower your workers

Involve workers in risk assessments especially in the selection of controls.

Involve workers in the development of procedures.

Ensure your team understands your procedures including what controls are to be applied and when.

Encourage hazard reporting and ensure that reported hazards are addressed in a timely manner.

Encourage workers to take action when required such as not running the plant until dust controls are operational or stopping when environmental conditions are too severe for your controls to be effective.

Consider the implementation of a trigger action response plan (TARP) to clearly indicate what conditions trigger control escalation.

Undertake regular work area inspections and assess effectiveness of controls and include workers in that process.

Controlling worker exposures

Review operations at your site, understand where dust is being generated.

Consider the hierarchy of controls i.e can that process be eliminated or substituted?

Can workers be isolated from the dust? For example, controlled work environment such as an isolated control room or sealed and pressurised cabins.

Can engineering controls be applied? Engineering controls can be multifaceted, such as in a combination of enclosed components and transfers with the addition of suppression (high pressure misting sprays)

What administrative controls can be applied? This might include washdown of equipment prior to servicing and procedures for operations that direct inspection and maintenance of engineering controls and triggers for when operations are reduced due to weather conditions and where PPE is required. Effective supervision.

What PPE/RPE is required? Have workers been trained and fit tested? (worker education)

Examples of controls

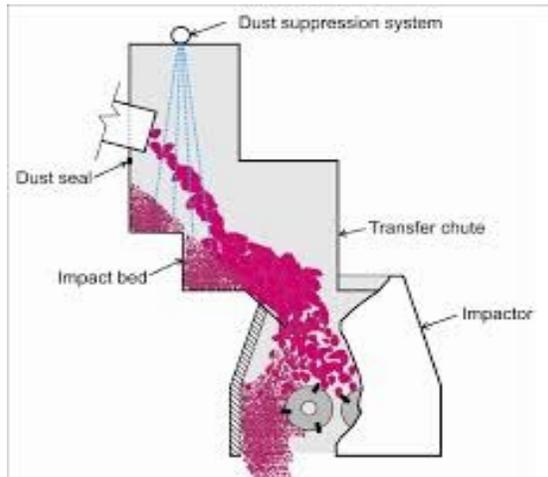
- **Elimination is not impossible**, but we acknowledge that it can be difficult in many situations. An example may be reconfiguring your plant or part of it to be a wet process rather than dry.
- **Isolating workers** from an environment where dust may be present is also a high order control. An example of this may be setting up the crushing and screening plant to be **operated remotely** or even automated. Having the control room away from the plant isolates the hazard from the worker.
- Another example of isolation is having mobile plant with **pressurised and filtered cabins** with well-maintained window and door seals.
- Engineering controls such as **dust extraction and or suppression**.

Examples of controls continued

- **Enclosing crushing and screening equipment** is also a proven control. It can be as simple as enclosing **conveyor transfer points** or screens and conveyors right through to completely enclosing the plant and keeping workers out while it operates.
- Administrative controls include **procedures, training, inspections**, maintenance and signage.
- PPE or RPE is a low order control but still an important control. For RPE to be effective it must be **selected appropriately** for the task, **fit tested and worn correctly**.

You need a suite of controls **all working together** to minimise how dust is generated and how it becomes airborne. Your **workers need to know** how to protect themselves and why it is so important to do so. You need **supervision** to ensure controls are **implemented and maintained** as effective.

Some examples



Questions
